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ABSTRACT

This paper offers an interpretive microanalysis of university students' work session with "Philippe," a multi-media instructional program for foreign language learning. The main objective of Philippe is to provide French-as-a-Foreign-Language learners with what is widely assumed to be what they need most: contacts with native speakers of the target language. The program's potential as a computer-assisted language learning (CALL) environment is discussed, and results of a study in which students in 12 groups were observed and interviewed during various Philippe sessions are reviewed. Qualitative analysis of the program reveals different levels of actualization of Philippe potential as an effective CALL environment. Microethnographic evidence points to an interplay of motivational as well as local interactional factors shaping the students' overall stylistic approach to utilizing the program and the construction of distinct learning environments. Sessions by the two most extremely contrasting groups of students are described in detail, and a complex set of interconnected contextual factors is found to explain their diverse levels of activation of the program's potential as a learning environment. (Contains 17 references.) (Author/NAV)

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Helping Philippe: Constructions of a Computer-Assisted Language Learning Environment

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Helping Philippe: Constructions of a computer-assisted language learning environment[1]

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This article offers an interpretive microanalysis of university students' work sessions with *Philippe*, a multi-media instructional program for foreign language learning. The program's potential as a computer-assisted language learning (CALL) environment is discussed here. Students in 12 groups were observed and interviewed during various *Philippe* sessions. These sessions were video-recorded. Qualitative analysis reveals different levels of actualization of *Philippe*'s potential as an effective CALL environment. Microethnographic evidence points to an interplay of motivational as well as local interactional factors shaping the students' overall stylistic approach to utilizing the program and the construction of distinct learning environments. Sessions by the two most extremely contrasting groups of students are described in further detail. A complex set of interconnected contextual factors is found to explain their diverse levels of activation of the program's potential as a learning environment.

The use of computers in education has grown tremendously in the past few decades and is now widespread to many content areas. According to Papert (1993), computers can help learners learn about learning (what he calls *mathetics*), and they can be sources of knowledge about how to get more knowledge. Central to this view is the belief that the improvement of instruction is not "the only route to better performance." Another route is "offering children [or learners in general] truly interesting ways in which they can *use* mathetics ... or *think about* it ... or *play* with it" (p. 140).

Computer-assisted language learning (CALL) is a specific domain in the interface between computers and education which provides tools to

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help people learn foreign languages. In their latest efforts, CALL materials designers have been striving to develop instruments that attempt to reproduce, in a controlled environment, some of the challenges that language learners would encounter in the real world. *A la rencontre de Philippe* (hereafter referred to as *Philippe*), the multi-media instructional program in question, is the result of a large project to develop an integrated computer/audio-visual interactive instrument. Its goal is to engage learners of French-as-a-foreign-language in a learning experience in which they can control various factors, such as adjusting pace and accessing language help, while still facing the most genuine everyday tasks that present-day technology can offer to aid the development of comprehension skills beyond "the purely linguistic dimension of language" (Teacher's Guide, p. 5).

Crookall, Coleman and Oxford (1992: 94) argue that before we inquire about whether computers make language learning more effective, "we need first to ask 'what is CALL like?' or 'what happens when a computer is used in language learning?'" This study is therefore guided by an interest in describing the actions of students of French as a foreign language when they use *Philippe*, and the specific conditions that influence these learners' degree of activation of *Philippe*'s potential as a learning environment.

What is Philippe?

Different perspectives will yield different answers to this question. The reference materials that accompany the program describe *Philippe* as "an interactive video designed ... to improve students' language comprehension skills by exposing them to the spoken French of native Parisians" (Reference Manual, p. 1). The basis of *Philippe* is a videodisc especially produced for interactive pedagogical use. The action revolves around a young free-lance journalist, Philippe, who has been thrown out of his girlfriend's apartment after a serious argument. Students are asked to find a solution to Philippe's predicament: before the day is over, Philippe has to both finish a story which could lead to a permanent job, and find a new place to live. Seven distinct endings are possible, including finding Philippe an apartment to rent, or perhaps patching things up with his girlfriend. According to the answers they give to Philippe's questions and other actions they perform throughout their session, students see different scene versions and follow different storylines. They can visit real estate agencies, apartments, and bakeries using a map of Paris for "surrogate travel." As claimed in the Reference Manual, comprehension tools such as video and text previews, context-sensitive help, full and partial French subtitles, an electronic glossary, and an alternative studio soundtrack — all of which the teacher can control access to — allow for *Philippe* to be used by students of different levels.

The makers of the program therefore emphasize *Philippe*'s technology by defining it as an *interactive video*. Strictly within a foreign-language-pedagogy perspective, an interactive video involves the incorporation of

video material to a computer program which, according to Jung (Jung 1992: 31), "accesses bits and pieces of video ..., asks questions in connection with the excerpts shown and evaluates students' answers to branch off into further questions or to present remedial loops to those students who experience an undue amount of difficulties." Jung also refers to interactive video as "close to being an ideal technical configuration for the autonomous and/or self learner."

The main objective of *Philippe* is to provide French-as-foreign-language learners with what is widely assumed to be what they need most: "contacts with native speakers of the target language" (Jung 1992: 33) and with the native environment. The *Teacher's Guide for A la rencontre de Philippe* makes this objective explicit, since the manual tops its list of the three major advantages of videodiscs in language learning (the others being *control*, and *interaction*). It argues that "the computer ... gives the learner a large array of tools which will allow them to explore the materials in a controlled manner." This "gives the learner the opportunity to come in direct contact with a foreign environment" while avoiding what is perceived as a problem of immersion situations which "can also be overwhelming, as the learner may feel inadequate and not sufficiently proficient" (p. 3).

From a more generic perspective, *Philippe* is a *computer-mediated language learning environment*.[2] Crookall et al. (1992: 93), who see control and interaction as the two major dimensions to be looked at in CALL research, propose four types of computer mediated learning environments: computer-determined, computer-controlled, computer-based, or computer-assisted. These environments vary in two respects. The first is the degree of learner-computer and inter-learner interaction they allow or promote. The second has to do with the locus of control over the environment (learner or computer), with "each element being inversely proportional to the other: [i.e.] the greater the learners' control over the learning environment, the less the computer has control; and the more inter-learner, the less learner-computer interaction there is" (p. 101).

At least in theory, *Philippe* is a computer-assisted environment (CAE). Crookall et al. (1992: 105) write that "this type of environment is characterized by a high level of both control over the situation and interpersonal interaction. Decisions and outcomes are essentially the result of inter-learner interaction and negotiation in social activities away from the computer." This fits nicely with many of the sessions of students using *Philippe* observed for this study and to be reported below. The learners exercise control not only over what comes up on the screen, depending on their decisions and interests, but also over how much work they will do, since there is no serious external penalty for not doing anything in particular (at least for the students in this study). In addition, Crookall et al. describe CAEs as

[2] The term *learning environment* will be used here to refer to the general set of elements in the setting and the situation, including (but not being limited to) both the computer/video and the learners (cf. Crookall, Coleman & Oxford 1992:95).

involving complex language manipulation and situations often in the form of simulation. Both these features are certainly a part of working at *Philippe*.

Thus Crookall et al. (1992: 105) conclude that CAEs also seem to have the highest learning potential in terms of "oral communication and social interaction skills." They write that this is so because CAEs put learners more in control of events while also fostering inter-learner, rather than computer-learner, interaction. In addition, CAEs have as their main goal the promotion of "involvement with the social dimensions of the situations" and conceptualize language "as a tool for meaningful communication among humans" rather than as a code.

These views reveal a belief in what a critic calls the "maxims of technological lesson design" (Garrett 1991: 3-4), i.e. that students learn best when they are in control and are involved in the material, and when they are in control of their own learning. Garrett shows skepticism about the validity of the underlying beliefs in conclusions like the one cited above, charging that they do not represent "testable hypotheses" or "a theory" (p. 5). Research in educational anthropology, however, seems to contradict Garrett's claim. Greenfield and Lave (1982: 186) have shown that "education that relies heavily on observation and imitation by the learner may be the most effective way to teach a given task but the least effective for transfer to a new task." If we agree that the effective development of foreign language comprehension skills must necessarily be generic, since every new comprehension task will be different from the previous one, we should see value in a learning environment which allows the student to learn by trial and error without social or economic risks (e.g., face loss), as is the case with *Philippe*.

In addition, the flexibility that *Philippe* offers to accommodate students with different levels of proficiency seems to indicate that it is an environment that allows for scaffolding by the program but at the learner's discretion. In other words, the program offers challenges and ways to meet them with various help features at the user/learner's disposal. Thus, ideally, *Philippe* can be activated as a zone of proximal development, as it allows for "potential development as determined through problem-solving under adult [teacher and native-speakers] guidance or in collaboration with more capable peers" (Vygotsky 1934/1978: 86, cited in Cole 1985: 155).

In summary, *Philippe* represents the state-of-the-art in computer applications to foreign language learning not only because of the technology behind it, but also for its potential to be constructed as an effective learning environment. As some researchers have pointed out, however, the actualization of all this potential is dependent on the way students use it (see Crookall et al. 1992: 96, for a brief review). Expanding Mercer's (1993: 37) comment beyond the classroom, the observations to be reported below confirm his view that "the quality of understanding that learners acquire through the use of information technology ... is not, and will never be, determined [only] by the quality of the interface between the learner and the technology."

Usually, however, concerns about interaction in CALL focus on the interaction between learner and computer (e.g., Garrett 1991). Crookall et al. (1992) see a need to correct that myopia in CALL research by necessarily looking, to the extent that this is possible, at the entire learning situation and the range of types of situations in which the computer may be involved in learning, and including interaction as a situational component. As they point out, "the most significant [interaction] in our case is, of course among the learners themselves" (p. 100). Other aspects of the situation, such as student-teacher relationships, are also important in this network of interactions. Even if *Philippe* is potentially rich, the analysis of the observations in this study will try to demonstrate that other powerful sociocultural elements intervene, and that they play a key role in the activation of *Philippe* into an effective learning environment.

The following sections report the observations and analyses of different actualizations of *Philippe* as a CALL environment by describing and discussing the doings of 12 groups of students working at it in various sessions.

Description of study

With Light (1993: 41), "here we shall be concerned with the claim that what goes on between learners can be crucially important to the effectiveness of the [computer-assisted] learning process." The main concern of this microethnographic study is to see to what extent the different student groups activated the potential of *Philippe* as a CAE in the terms described above, and show the range of variation among the different actualizations. More specifically, an attempt is made to describe the interaction of the various elements in the learning environment, especially inter-learner interaction, and the degree of fulfillment of *Philippe*'s potential as a computer-assisted foreign-language learning environment.

Data collection procedures

The work being reported here is part of an on-going CALL research project. In the fall of 1993, teachers of French X and Y in the Romance Languages department at a large U.S. university began efforts to formally incorporate *Philippe* in their regular course work. Two of these teachers (X and Y) collaborated with the project. Their students in an intermediate level course were videotaped while working at a *Philippe* station set up for them. The students in the two classes were fully informed about the recording of their sessions and were given the opportunity to go to another station located somewhere else on campus in case it was inconvenient for them to come to the research-site station for whatever reason.

Videorecording of the *Philippe* sessions followed Erickson's (1992) guidelines for the simplest shooting procedure. Two videocameras were used simultaneously: one recording the computer screen and the other encompassing the complete work station and the users. In addition to the audiovisual recordings, rough fieldnotes from direct observation were kept throughout all of the recorded sessions and were also used as data for this study.

Student interviews were also conducted both before and after the sessions.[3] In the first game session (G1), when students had only the generic task of completing the program, interviews focused on demographic information before starting the game and on impressions about *Philippe* after it was over. For the second game session when they had a specific-task (G2), students were asked to briefly describe what that task was before they started the session. A longer interview about comparative impressions between first and second sessions and final comments about *Philippe* was conducted after students completed both sessions.

Interviews aimed at being as informal as possible, and a loose agenda was followed. Students were asked to offer their impressions regarding the computer interface, an estimation of the time they thought they spent listening to French, their strategies according to their task and interests, and comparisons between working on *Philippe* versus other experiences they might have had with language lab materials. Observations were also made during one class meeting of one of the groups (teacher Y's) in which the students discussed their work with *Philippe*. Contacts were made with both teachers in order to clarify information and get their points of view of the situation.

Student Information

A total of 27 students were videotaped during their complete sessions at *Philippe* (1h30min, usually). Students were grouped differently in the two classes. Teacher X assigned them to work together based on her feelings of which students would work together best. Teacher Y left it up to her students to get organized into groups.[4]

Student groups were labeled according to the course section they were in (X or Y) and the chronological order in which their sessions were recorded. All X students were recorded during their first attempt at *Philippe*, in which they were not given any specific task other than to simply go through the program trying to find a solution to Philippe's problem. Students in groups 1X to 5X were also recorded during a second attempt, when their specific task was to complete a class assignment describing the relationships among the three major characters, as well as these characters' attitudes towards money matters. Y students were also recorded during their second attempt, in which their specific task was to describe the contents of two messages left on Philippe's answering machine, and then to collect information to write a good-bye letter from Philippe to his girlfriend.

Primary data analysis

The analysis of the primary data (i.e., audiovisual recordings and fieldnotes from direct observations) was carried out by means of a simplified version of the activity analysis reported in Ginsberg (in press). This previous analysis chartered the possibilities that the program offers in terms

[3] Only one group was not interviewed due to schedule conflicts.

[4] See Appendix 2 for table summarizing demographic information on the recorded sessions.

of student exposure to French, with special attention to listening comprehension, and the constraints of the computer interface on learner activity. A detailed activity analysis was then carried out, showing a chronological account of what students did. In the present study, a simpler description of what students did was produced by tracking their path in the program along with details about their use of the language help system and of the game interface (e.g., surrogate travel or information gathering).

The intimate scrutiny of the possibilities of the interface and of students' activities carried out in previous analyses allowed the researcher to produce a highly informative summary of the students' sessions when watching the videotapes. Revisiting any of the path summaries produced for all the sessions provided a clear picture of what students did in their interaction with the computer and the video, which in turn allowed for easy stylistic comparison. The example below illustrates the kind of information contained in a path summary (for a glossing of its main contents in regular written discourse, please see Appendix 1):

Path summary activity analysis for ***7XG1*** *(group 7X, game 1)*

1. intro to story
2. opening scene (revoir: bubble, slow audio)
3. apt a.m. (Figaro; a. machine: play* 1st msg, sbox, play other msgs; phone: Figaro ads; Figaro; liste des agences)
4. visit apt (f. St. Denis: + carnet notes; sbox)
5. (taken to) rendezvous at 11/msg? (revoir: bubble, slow audio) Soloniac
6. apt p.m./check? no idea (notes; Figaro) *no a. machine*
7. rendezvous 14:30 at aunt's/ request apt? (revoir: bubble) yes/ give up? (revoir: bubble) yes
8. apt end of day (no solution)

These summaries inform both what happened and what did not happen given the expectations and possibilities in the program. For example, in the sample above, the students failed twice to offer Philippe an apartment to rent. This opportunity comes up on the screen as a possible response to two questions asked by Philippe in the game segment described in line 7.

In addition to the path summaries, fieldnotes were written during viewing sessions of videorecords. These notes focused on aspects of the students' use of the help system and overall attitude towards the program and on their interactions with the various elements in the learning environment, especially with one another. Stylistic patterns started to emerge as a result of these observations during analysis. It seemed that the type of interaction students had with the various elements in the environment had a marked influence on the effectiveness of *Philippe* as an instructional tool and on the learning environment in general. This analysis is discussed next.

Activating Philippe *as a computer-assisted learning environment*

Research in various disciplines interested in issues of learning has come to accept that cognitive development is at least in part a social phenomenon. In a discussion of various works on cognition, Cole (1991) finds three strands of thought on the question of whether learning is basically an individual or a sociocultural phenomenon. One strand considers "the notion of socially shared cognition an open question" (p. 399). The second strand, "the normative framework," which sees cognition as an inside-the-head phenomenon, has come to agree that "private achievement ... can be markedly facilitated by properly organized social interaction" (p. 402). The third strand "question[s] the sharp distinction between the social and the cognitive" (p. 404). This last line of research shows us that "aspects of cognitive performance that once were attributed to psychological processes within individual children emerge as joint accomplishments between people, that is, as socially shared" (p. 405). There is, in sum, wide consensus among students of cognition that it is productive for people to work together at least in some conditions.

In his discussion of current research on collaborative learning with computers, Light (1993) finds evidence to support the view that computer-assisted learning environments can present such conditions. According to this author, working with one or more partners may make for a more exciting or less threatening task. Efficiency may be enhanced as partners build on one another's ideas, or help one another remember things. Light adds that "we might attribute particular significance to the role of argument and disagreement in shaping learning, or more simply suppose that just *talking about* the problem to someone else helps us to think about it more clearly ourselves" (p. 44).

From the observations of students working at *Philippe*, it soon became evident that they were doing a great deal of work with each other, and that this work was a crucial component in their construction of *Philippe* as a learning environment. More interesting, however, was the observation that students worked together at the computer in markedly different ways. A few categories surfaced as the main aspects which varied from group to group. These categories are presented and qualified below.

Categories of stylistic difference

Involvement with the game or story refers to the degree to which the students in the group reacted to the plot of the story or to the playing of the game. Even though these are two different things, depending on whether the students related to the program more as a game or as a story, for the present purposes they are considered as equally significant. Highly involved groups had an interest in the characters' personalities and in what would happen to them in the story. These students often put a great effort into making sure that the apartment they were considering was to Philippe's liking, and they tried to do things right within the constraints of the game while persevering towards an acceptable solution. Other groups of stu-

dents cared less for the characters, their fate, or which solution was found. Some were not even bothered when they failed to reach a solution.

Use of the **help system** refers both to the amount and the type of use that different groups made of the language help system, that is, the various features in the program designed to facilitate understanding of the story and effective playing of the game. Students varied from extensive use of these features to no use of them at all. In addition, while some students used the help system as they would use an audio or video player, others used the more sophisticated features available in *Philippe*, often in resourceful ways, to maximize their comprehension or to retrieve information quickly. For example, when looking for a particular piece of information, some would use the built-in comprehension-checker for quick confirmation of the precise location of that information in the video for replay.

Amount of **exploration** refers to the amount of time the group spent at the station and the type of exploration they did. While some groups hurried through the program without doing much beyond the unavoidable path, others spent time exploring Philippe's apartment or trying to pursue different avenues to solve Philippe's housing problem. Still other groups were focused on working with language comprehension issues more narrowly, and thus did less in terms of visiting apartments or looking for alternative information or courses of action beyond the core path of the program.

Assessment of Philippe in the interview after the game has to do with the group's evaluation of their *Philippe* experience and with their ratings of the validity of spending time at it. Most students did not seem to mind doing the work because of its novelty as a class assignment. However, there were a few, at one extreme, who were highly positive in their evaluation, while at the other extreme there was a pair who strongly disliked the experience. These sharply contrasting assessments are of central importance to this investigation and are discussed in detail in a later section.

Inter-learner **interaction** refers to the degree to which the students in the group collaborated in building their strategy in the game and during decision-making moments, in sharing information and soliciting help in their efforts to cope with the language and the comprehension of the story. In some groups, students were working as a team, in close collaboration in all these aspects, while in other groups there would be collaboration in one aspect but not in others (e.g., information sharing and collaborative scaffolding during intensive listening comprehension efforts vs. unilateral action by a single student at decision-making junctures, which thus involved little inter-learner interaction).

Note that the smoothest type of interaction is not necessarily considered the best here, for conflict-resolution seems to be a potentially positive phenomenon for learning. In fact, a CALL microanalytic study reviewed by Light (1993: 52) suggests that there is a critical role for discussion between learners precisely at conflict points, that is, when there is some kind

Table 1: Possible range of variation according to the categories of stylistic difference

	+1	0	-1
• involvement with game and/or story	very involved	involved to some extent	little or no involvement
• use of help system	very extensive and/or resourceful	extensive, but limited, yet resourceful	very limited and traditional or no significant use
•amount of exploration	long time spent and much exploration	average time spent and some exploration	limited time spent and exploration close to minimum
• assessment of *Philippe* in interview after game	*favorable and/or* enthusiastic	*indifferent or* favorable with reservations	*skeptical and/or* unfavorable
• inter-learner interaction	collaboration across activities	collaboration in some activities	collaboration in few activities and/or limited inter-learner interaction

of mismatch between what a student is trying to bring off and what the partner, or the computer itself, allows or comprehends. According to Light, it is precisely at this point that "the different perceptions of the problem and of the solution have to be negotiated, made explicit and rendered compatible with the ... constraints of the task."

The categories above arise from both the CALL and foreign language pedagogy literature as well as from what are believed to be useful criteria to examine the extent to which students are actualizing *Philippe*'s potential as an effective learning environment. An ideal student group would therefore end up with a positive attitude towards the program, feeling that their time had been well spent either because they thought they learned something or because they had fun. They would also have found a personally satisfactory solution to the problem. To achieve that, they would have done a considerable amount of exploration in order to get to the desired solution or to avoid an undesirable one. This in turn would mean, first, that they comprehended the story, most likely by accessing the language help system, and, second, that they managed to make the game work the way they thought was best. The exact amount of time in each case would depend on their need for and use of the resources available.

In order to come up with a more focused synoptic picture of how each group acted, student game sessions were re-examined according to these categories and qualified as to where their activities figured in a three-point scale for each category (+1, 0, -1). (See Table 1.)

Group ratings according to the categories of stylistic difference

Table 2 shows the result of data analysis according to the criteria and method presented above, and a composite score of the overall utilization of *Philippe*. For those groups with two games, only the second was counted in the computations. This score gives us some sense of the extent to which each group managed to actualize *Philippe*'s potential to create a learning environment. It is not claimed here, however, that these ratings represent what students learned in using *Philippe*.

Table 3 is a continuum of the overall rates of activation of *Philippe*'s potential as a learning environment according to the categories of stylistic difference, showing the overall range of variation among the 12 groups observed.

Tables 2 and 3 reveal a few interesting findings. First, they point to a high degree of interaction among learners during their work with the computer and the video. For most students, therefore, working at the computer was very much a social activity, and not at all a cold and dry experience with a machine as some seem to believe (cf. Light 1993).

In addition, most students did a fair amount of work in interaction with the computer and the video as well, since few groups stayed at the minimal threshold imposed by the software in terms of time and exploration, and only three groups failed to use the language help system to a considerable degree.

As far as the help system is concerned, it seems that the novelty of a number of features often makes them opaque so students may not use them simply because they are not aware of what those features offer, or, in a few cases, because students don't know that the features are available. Evidence from observation and direct report by students indicates that more extensive, hands-on orientation prior to the first game should probably be attempted in order to correct for that.[5]

It was also interesting to see that, overall, students were often not involved with either the game or the story. Correlations among the categories are beyond the scope of this study, but nevertheless it is worthy of note that even though all kinds of compensations occur among the categories, in no case do we find a direct discrepancy (+/-) between a group's involvement and its assessment of *Philippe*.

Speaking more broadly, the different degrees of actualization of the potentials offered by *Philippe* as a learning environment become apparent in the charts above. There are students who, according to the categories, are shown to have had an effective learning experience, while others seem to have been using less of the potential available. This suggests that a computer-assisted learning environment is in fact very complex and that in no way can we be sure that an effective learning environment will exist simply by having the best computer software and the best interactive technology. In the words of Jones (1986: 186, cited in Crookall et al. 1992: 112),

[5] However, no observed pattern emerged in terms of differential activation of *Philippe*'s potential as a learning environment according to familiarity with computers *per se*.

Table 2: Ratings[6]

group/game	involvement	help system	work done	attitude	interaction	group score
1Xgame G2	1	0	0	1	0	2
2X G2	0	1	1	0	1	3
3X G2	-1	0	0	-1	1	-1
4X G1 & G2	1	1	1	1	1	5
5X G1& G2	0	0	1	1	1	3
6X G1	1	-1	1	?	-1	-2
7X G1	0	0	0	0	1	1
8Y G2	-1	-1	-1	1	1	1
9Y G2	0	1	0	1	0	2
10Y G2	-1	-1	0	0	0	-2
11Y G2	-1	1	0	0	1	1
12Y G2	-1	0	-1	-1	0	-3
category total	-2	1	2	3	6	10

"the value of a computer simulation for communicative language teaching does not lie in the program itself. As with any other piece of teaching material, it depends on what you do with it!"

In addition, the variation we find among these groups of undergraduates in their actualization of *Philippe*'s potential confirms the findings of Light et al. (1987, cited in Light 1993: 48) that "simply putting learners together in front of a computer will not ensure peer facilitation of their learning." In looking at the specific groups more closely, it seems fruitful to compare and contrast the stylistic approaches of groups clustered in different areas of the continuum.

Some similarities can be found in the way groups placed in the extreme positive side of the continuum approached their work at *Philippe* (2X, 4X and 5X). They did a lot of work interacting with the computer and with each other. While 4X could be said to have been following a super-involved mode of operation (which will be analyzed in greater detail later), 2X and 5X were only less enthusiastic, but every bit as hard-working.

To the immediate left of these three highly engaged groups, we find two groups (1X and 9Y) who did a bit less exploration, even though they were also engaged in their work. Both of these groups were perceived to be interacting less collaboratively than they could have been, in the sense that their interaction did not seem to flow easily. The interaction between the two women in 1X seemed to be asymmetric, with one of them making

[6] Scores for those groups with two games observed show that the overall score either remained the same (2X, 4X and 5 X) or they improved (1X and 3X). This is not surprising, given that in a second game students tend to be more at ease with the interface and with one another. In addition, the tables show that for most students, *Philippe* was a worthwhile experience, with only two groups of students reporting a negative evaluation of the time the spent at it.

Table 3: Continuum

-5	-4	-3	-2	-1	0	1	2	3	4	5
		12Y	6X 10Y	3X		7X 8Y 11Y	1X 9Y	2X 5X		4X

most decisions without really taking the partner into account. Y9 had three members, two males and a female. There was apparent co-membership between the younger male and the female, and a cordial but distant interaction among all three which seemed to preclude a free exchange of ideas. Also, both these groups had problems with the interface. These were independent workers, that is, they were engaged and motivated, but failed to work as a team.

The cluster of groups next to the center of the continuum (7X, 8Y and 11Y) had high levels of interaction, worked collaboratively, but was heterogeneous in the other aspects. 7X was a heterogeneous group whose interaction aimed more at bridging the gaps between the two members than at getting the work done by having two heads thinking together. The two Y-groups were result-oriented, and worked economically to get their task done, but their interaction was different in quality. 8Y was a lively group of three women who were especially interested in the story of *Philippe*. The two women in 11Y were far less involved. This seems related to their contrasting use of the help system (see Table 2).

The four groups towards the negative end of the continuum (3X, 6X, 10Y and 12Y) were all uninvolved with either game or story, and their style could be termed as detached. This should not mean that a causal relation is necessarily implied, because enough contradictory evidence to that can be found in the other groups (see Table 2). 3X was a group of two women who collaborated often, but not always on equal terms, and did a reasonable amount of work, but at a superficial level, with the clear intent of getting the job done. In this they were similar to the groups across from them in the continuum, that is, they did what they were supposed to do in the least amount of time. The two groups to their left were unemotional and worked less than most other groups if we take interaction between learners and computers, and among learners as a composite indication of how much they did. The two women in 6X worked thoroughly with the interface as their main interactional concern, whereas the man and the woman in 11Y rushed through the program, interacting with each other but treating the computer program more as a topic of conversation than as an interactional element. Finally, 12Y, whose work will be examined in detail later, was mostly negative to the extent that one could say that *Philippe* was hardly a learning experience for them.

This reappraisal of the charted approaches across the 12 groups suggests that, despite the similarities in the way groups with comparable ac-

tualization scores worked at *Philippe*, they also displayed considerable dissimilarities. It is fairly clear that certain mismatches among individual learners made their joint work unproductive. It is obvious from the analysis offered above that there is considerable variation in the way students approach *Philippe*. It is also apparent that elements outside the students' interaction with the computer are involved in the type of computer-assisted foreign-language learning environment they end up constructing upon using *Philippe*.

However, greater detail is called for in order to qualify the description of the differences in the construction of the learning environment by these different groups based on the stylistic differences discussed so far. As Light (1993: 46) has pointed out, "in order to understand why peer facilitation of learning is sometimes found and sometimes isn't, it is necessary to look more closely at the patterns of interaction involved." The two extreme cases found (12Y and 4X) in the continuum will be the focus of a detailed analysis presented below in order to give a perspective on specific disparate approaches to activating *Philippe*'s CAE potential.

A closer look at two groups

In analyzing the taped interactions which formed the main data corpus for this study, it soon became apparent that students came to the *Philippe* station with quite specific and often contrasting views of what they were going to do, and of how that activity connected to their previous experiences with computers, French, France, video games, lab exercises, and so forth. It was also clear that they often had to recompose their initial attitudes in the face of opposing or sometimes reinforcing aspects of their partner's attitudes. In addition, they had to modify their attitudes as they came up with listening comprehension hypotheses that did not fit with other information they were getting from the computer or the TV screen. Still another element that surfaced in the environment was their teachers, who were never physically present, but who had been ultimately responsible for their being there. To a much lesser extent, students also reacted to the researcher's presence in the room as a guide to the program. The result was often a dynamic microcosm of mutual influences which seemed to be reflected in the ways the groups of students constructed *Philippe*.

In almost all of the groups students negotiated a great deal in order to frame and understand the activities proposed by *Philippe* in a shared way. The complexity of these negotiations depended on the compatibility among the members of each group and their past experiences. Some groups with clear differences seemed to have worked basically through compromises. Groups composed of students of different sexes seem to fall in that category.[7]

In looking at the two groups of young men on the opposite points of the continuum, we see more of a convergence of reinforcing influences

between the two group members moving in the same direction towards a joint interpretation of the situation at hand. Consequently, they follow a course of action that is mutually constructed and shared, even though one group's approach looks very different from that of the other.

The two groups to be inspected in detail now are especially apt for comparison. Both groups were composed of two male students with similar foreign language experience. In both cases one partner was slightly older than the other. Yet each group's approach to working at *Philippe* and, especially, their assessment of their experience, could not have been more different. Thus a closer contrastive look at their *Philippe* sessions is motivated not only because we find them at opposite ends of the continuum presented above, but also because it is remarkable that such similar pairs of students (also in terms of sex, age, race, class and nationality) have come away from a couple of hours working together at *Philippe* with such disparate outcomes. Of course we could simply say that one group was motivated and the other was not, but that would be a superficial statement hiding the fact that both groups invested time and energy in *Philippe*, one by working at it in a way that closely matched the ideal projected by CALL materials designers and teachers; the other by rejecting *Philippe* as a learning environment. From observations, both groups were doing what they felt was right to do and worked hard at it.

Strauss' (1992: 1) discussion of the forces behind human motivation, that is, why we do what we do, illuminates our effort to understand why these pairs of students constructed such different CALL environments. Strauss sees human motivation as "the product of interaction between events and things in the social world and things in people's psyches." She stresses that "motivation is dependent on cultural messages and is realized in social interaction" where cultural understandings are constantly negotiated. She also points out that "it is important to investigate the types of experiences that lead people to feel (often without thinking about it much) that a certain course of action is their only reasonable alternative" (p. 13). These conceptions of motivation are appealing because they allow some room for the fact that "rarely, if ever, does the public realm of culture present a single, clearly defined, well-integrated reality" (p. 11). Crucial to understanding the motivations of the two focus groups in the following analysis is Strauss' notion that "members of a society can use the same languages and share exposure to many of the same repeated social messages while differing greatly in the penumbra of associations around their shaped concepts" (p. 12). The following ethnographic report of the two focus groups' actions will reflect just that.

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[7] The groups observed which had members of both sexes (7X, 9Y and 10Y) tended to devote more inter-learner interactional effort at a procedural level not necessarily conducive to smoother learning (e.g., trying not to impose their wishes on their partners). In addition, these students tended to offer different opinions about what they did and how they assessed *Philippe* in the interviews. This is an intriguing area for further research.

Harry (S47), a sophomore, showed up early for his session and approached me while I was in the office next to the *Philippe* station.[8] He had come early to tell me that his partner, to whom he referred as "the kid," would probably not show up and that he would simply work by himself at the other *Philippe* station located elsewhere on campus. That was fine, but, since he stayed, I asked him if he would care to comment on *Philippe* based on the impressions from his first game. He said he had not liked it because it was not interactive (he "couldn't really go places") and that, being "a History person," he favored more traditional teaching programs. "If I knew this was part of this course, I wouldn't have taken it," he added. In the meantime his partner arrived, and they decided to go through the program because they wouldn't be able to meet again to complete their joint assignment on *Philippe*, which was due shortly.

John, (S48) the younger partner in this group, was a special student. He was a high school senior who took French classes at the university because he had apparently taken all the French courses available at his school. However, he did not appear to be any younger than Harry.

In the beginning of their session, Harry and John acted in a self-conscious manner, looking at the camera behind them and referring to their teacher as if she were behind it. For example, before starting their game they talked about the grades they had gotten in a previous assignment and Harry turned around and said to the camera: "I did better than a B, [teacher Y's first name]." Later in the session, Harry asked if I spoke French, and I answered with an ambiguous head movement which he took for a no.[9] He then said in a sarcastic tone: "Oh, I forgot you were going to be a teacher or something." This remark as well as his other references to teachers indicated that this student didn't hold teachers in high esteem.

As I went outside to check the sound recording from the camera located outside the room, I heard them talking about the legality of "being forced to be taped." I came in and told them that they did not have to do it at all, and that they could just tell me to shut the cameras off, or they could go do their work at the other station if they felt like it. They had not realized there was a second camera tape-recording their session, even though they had been told about it and in spite of it being in their full view. So Harry laughed nervously: "This is like the KGB or something. You're listening to what we're saying from somewhere else!" I clarified how I had heard their comment, insisted on turning the cameras off, but they backed off and insisted that the recording go on.

Their session was short (38 minutes) in comparison with the average hour-and-a-half spent by other groups in their class. This included time spent on completing the class assignments, down to the level of the word-

[8] All proper names used here are pseudonyms.

[9] This was to avoid problems observed in previous sessions (not in the corpus for this study): when told that the researcher understood French, students felt s/he was from the French

ing of the answers. While this was not unusual (the other focus group also did that), their time spent actually working on *Philippe* was relatively limited given their short session. In addition, despite their familiarity with computers, they had problems with the interface, not knowing what to do or how to go about doing what they wanted. I volunteered some information to help them, but they still refused to make use of most of it.

There is ample evidence in the recording of this session to conclude that these students rejected *Philippe* and refused to interact with it on its terms. More than that, the interview not only confirms their "hostility against *Philippe*" (a phrase actually used by Harry), but also makes clear that many of their criticisms of *Philippe* were based on (mis)interpretations of incidents in their interaction with the interface (e.g., they never realized that they needed a *complete* address to be able to visit an apartment for rent).

Their interview was extremely revealing, probably for them as well. In fact the interview was almost as long as their game session. During that conversation they gradually acted less aggressively. Initially they gave a thoroughly negative assessment of their time spent at *Philippe*. Based on their second game session, one can easily understand their feeling. What was striking, however, was the way they perceived the game: "The game doesn't work. It's not fun because it's ambiguous. It doesn't know what to do or where it wants to go. It should either be a film where you're a passive watcher or it should be a game, but the way it is is frustrating. In general, it's a bad idea."

In trying to have them be specific about what it was that bothered them, it became clear that their frustration was based on an inability to handle the interface on its terms, that is, within the limits of present-day technology. These students appeared to have felt genuinely betrayed by what they called "the illusion of the game." According to this view, in a real game they should be able to go into a café in Paris and ask people sitting at the next table whether they knew of an apartment for rent, and thus solve Philippe's problem. Although unrealistic expectations of this sort are common among *Philippe* users (e.g., to think that a human-like acting device will in fact answer the telephone and converse with them when they call), it is interesting that these students have gone on record as demanding things that they might have known were technically unrealistic. Furthermore, they blamed their teacher for having said they were going to have a "choose-your-own-adventure experience" with *Philippe* when in fact all they got was frustration. It seems that this strong self-deception (Alexander 1989) was indeed instrumental in maintaining the unity of their temporary bond as peers against outsiders. It legitimized their rating of the overall experience as "very low return for the amount of time spent."

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department or that s/he would help them. When told otherwise, they would go into time-consuming unnecessary explanations when in need of help with the interface or during interviews.

They also spoke at length about how offended they had been at the orientation during class before they were told to work at *Philippe*. They complained bitterly about their teacher "and this woman who also spoke French" (i.e., X, the teacher from the other group) who gave a rushed orientation all in French without having anybody try out anything and who gave short shrift to student requests for clarification.

Although this is a complex picture possibly involving elements outside both the scope of this inquiry and beyond the reach of our data, there seems to be enough indication to conclude that these students did not use *Philippe* as an effective learning environment, and that their placement at the extreme negative end of our continuum is not an artifice of the categories used to analyze their interaction.

It is important to point out that Harry was much more aggressive than his younger partner, John. However, John never disagreed with any of the remarks made by Harry. Quite the contrary, he not only offered support for Harry's points during the interview, but also volunteered his own criticisms of *Philippe*, resenting the time he spent at it.

John's mode of operation, of reinforcing rather than questioning his partner's proposals for understanding *Philippe*, is not surprising given his position vis-à-vis Harry: John is clearly academically-oriented, and he is also the only high-school student in an advanced university-level French class. Here we see him working together with a fellow male student majoring in an academic discipline (History). It seems John was bound to emulate Harry's behavior, especially when we can safely assume that John aspired to being a member of a peer subculture of intellectual-type college students. This scenario ties in with Corsaro and Eder's (1990: 209) research on peer cultures, according to which "the main concerns of the peer culture of students from middle-class backgrounds are closely tied to visible school activities and to the dynamics for obtaining peer status."

Harry's actions also make sense when we look at them with these peer culture concerns in mind. According to Corsaro and Eder (1990: 214), the central themes in peer cultures involve "[a] the importance of sharing and social participation, ... [b] attempts to deal with confusions, concerns, fears, and conflicts in their daily lives, ... [and c] resistance and challenging of adult roles and authorities." Harry had had considerable experience in French, but this was his first college French course. He had a patronizing attitude towards John, whom he referred to as "the kid from the suburb." So he was, on the one hand, John's senior and his socializer into urban college life (they also sat next to each other during the class meeting observed). On the other hand, he was John's peer, sharing some of the insecurities of being in this French class with a teacher they didn't seem to trust. His restlessness regarding teacher figures was possibly related to his recent decision to major in History, and the probability of becoming a teacher himself. Finally, his "cool rebelliousness" echoes Corsaro and Eder's remark that "the resistance of adult rules and authority provides children

with a sense of control and autonomy, and for this reason such resistance may be a universal feature of peer culture" (p. 215).

These students jointly built a cultural construct which rejected *Philippe* as a questionable, untrustworthy instrument that justified rebellion, first, against their teacher, who gave Harry a grade below what he believed he deserved; second, against teachers in general (thus schools), who did not teach them all they needed in order to perform as expected, and then forced them to perform while watching behind their backs; and finally, against technological attempts at sophistication in teaching which promise more than they can deliver. Their limited activation of *Philippe* as a learning environment makes sense when seen from this angle. While we could arguably find elements that reinforced their motivation to construct *Philippe* as a hoax, as their rushed orientation or their classroom experience, more powerful forces shaping their rejection of *Philippe* seem to be the cultural models (Strauss 1992) that they brought into the room, and the amalgam of emergent influences in the interactions during their sessions, especially their inter-learner interaction driven by peer culture concerns.

Let us now look at our CALL success story at the other end of the continuum. Brian (S29) and Gordon (S30) were, respectively, a sophomore majoring in finance and a freshman who had not yet decided his major. Brian was thus Gordon's senior, like Harry was John's senior. Both Brian and Gordon have similar background experience as foreign language learners: they both had Latin in high school, 5 years of French in school and they were both taking their first French course in college. Brian had also studied Hebrew and Russian, while Gordon had spent time in France. The result of their similar experiences but different interests surfaced in their conversations during listening efforts at *Philippe*: While Brian's forte was associations and vocabulary, Gordon was strong on sound recognition and was more acquainted with French cultural aspects.

Brian and Gordon spent more time at *Philippe* than any of the other groups. In their first game session, they got involved in the game to such an extent that they ran out of time before they were halfway through it, so they expressed their wish to schedule another session the next day. They were the only group that did that. In this second session to complete their first game, they actually played the second part of the game twice, because they were not happy with the ending they came up against in their first attempt. In their second game, when they had a specific task, they were one of the few groups that made a point of getting to the end of the story, even if they didn't have to do that to complete the assigned task. In the first interview Brian said: "We came back here because we thought it'd be cool to finish, not because of her assignment. We only had to spend half an hour. But the longer you take, the more you get out of it."

These two students not only spent a lot of time at *Philippe*, they also interacted intensively with the interface both by using the language help system and by exploring the various options for visiting places and gath-

ering information. In addition, the two interacted intensively with each other during most of the time they spent together in front of the *Philippe* station, collaborating in dealing with the interface, in devising strategies and making decisions in the game, and in sharing information for comprehension. Moreover, they seemed to be having genuine fun during most of the time they spent at *Philippe*. In the interview they felt that it was a good thing to have done it together. "We helped each other. Yeah, we were a good team."

Their assessment of *Philippe* contrasted sharply with the assessment given by Harry and John in almost every respect. Brian and Gordon were excited about doing *Philippe* from early on in their first session. They had good things to say just about everything in *Philippe* after their first game was completed. Brian said he hoped there would be other programs like it in the future. Gordon said they had become so involved with the game that they forgot to write notes, referring to the fact that they had to report in class what scenes they had seen. The following excerpt from this interview gives us a sense of how they perceived their experience.

B: once we got here, I never thought about what she [their teacher] said.
G: it was a good game. that's what it seemed like. it didn't seem like an assignment, it seemed like, you know, you sit down and play computer games all the time.
B: yeah.
G: it seemed like a big treasure-hunt type thing
B: when we didn't get him the apartment, it was "oh, we lost!"
G: we bummed — it was so (wild)
B: and now we won, cause we got him his girlfriend and everything.

They repeatedly said they liked the game and the story, especially for the fact that it became clear that different things happened depending on what they did. They actually referred to *Philippe* as "cool — like a choose-your-own-adventure," that is, by using exactly the same analogy that Harry and John used to describe what *Philippe* failed to be for them.

One could easily picture Brian and Gordon as overzealous students whose concerns are just the opposite of Harry and John's, and that this would explain why the two groups used and reacted to *Philippe* so differently. However, the similarities between the two groups are too big to warrant such an explanation, also because Brian and Gordon do not fit the stereotype of hardworking student. Rather they were both acting according to the same peer culture concerns as Harry and John. The crucial difference between the two cases, however, was that the integration of the cultural models Brian and Gordon brought together when they interacted with each other and with *Philippe* constructed *Philippe* as something "cool" and favored working intensely at it.

Aspects of resistance to adult rules are present in their interaction, as can be seen in Brian's insistence that the reason why they came back for a second session to complete the first game had to do with *their* decision, and not with what the teacher had assigned. In addition, their conversations before and after the games were revealingly filled with adolescent concerns. For example, having no apparent reason to mention such a thing, Gordon came in the room and sat down for his second game and said: "Gosh, I just had the best cigarette in my whole life." Another telling element was their constant cursing ("She got all fucking pissed!") throughout the tape-recorded sessions. In the second game session, Gordon came in with a black eye from a game on the weekend. Although that was hardly noticeable, his attempt to conceal it actually made it a topic of conversation twice. Many other conversation gambits between the two revolved around such issues marking a "behaved defiance" of adult behavior.

A crucial factor legitimizing Gordon's interest in spending time at *Philippe* was the fact that he reportedly lived with his French girlfriend, a topic of conversation that came up both in the interviews and in the students' conversations. So here was an undergraduate, a freshman, who lived with his French girlfriend and who therefore had a peer-culture legitimate "need" to improve his French. Given that *Philippe*'s storyline revolves around a problem between Philippe and his girlfriend, Gordon's high level of motivation to work at *Philippe* was unimpeded by any concerns about a possible scar to his reputation as a cool, independent, sports-oriented, popular guy.

Brian was not the same type of guy, and in the very beginning of their first session, Gordon acted condescendingly towards him. Brian would say things like: "I didn't understand that, did you?" And Gordon would answer: "Yeah, this is fast and she is from the South," claiming not only to have understood the words but also to have identified the accent and therefore implying that Brian was not as sophisticated a listener as he was. However, Brian was persistent. As a result, it soon became clear that, despite his poorer listening proficiency, in terms of global comprehension, he was indeed as sophisticated as Gordon, only their fortes were in different specific skills. Less than 15 minutes into their first session, this became a shared understanding, as Gordon gradually changed his attitude towards Brian's listening comprehension doubts and questions. Soon they were interacting vibrantly, as if they were playing a game, with exuberant compliments ("You go, dude!!") and expressive nonverbal behavior like touching palms when they did something remarkably well, as if celebrating a scored point.

In the course of the subsequent sessions, Brian's more traditional expertise as a foreign language learner became more and more useful and thus respected by his partner. For example, he would often pick up flaws in Gordon's reasoning, with resulting clarification of words heard incorrectly or he would read the written information on the screen and help

with words that Gordon was not familiar with. He therefore did not have to act *like* Gordon to contribute to their team effort. He did not have to oppose Gordon's less orthodox style in any way either, because it did not clash with his, nor did it come in the way of his own motivation to work at *Philippe* to practice or improve his French. In fact, it seemed that the interaction at *Philippe* conferred Brian with some prestige before a peer belonging to a subculture that was probably different from his own, since his knowing French ("See, I do know a little French!") was a clearly desirable attribute in Gordon's cultural model.

It thus seems that the chemistry was right between Brian and Gordon in the sense that the two produced a common construct of *Philippe* in which it was "cool" (i.e., acceptable and prestigious) to work at it and to explore it. In this unimpeded motivation to explore *Philippe*'s potential, they reinforced each other's interest in getting involved in *Philippe* as a game and to some extent also as a story. This in turn led them to use the help system so that they could play to win, and to explore a lot to learn more about the story. Their interaction with the computer was thus intense and profitable leading to their positive assessment of it. The overall result was that they constructed an effective learning environment in using *Philippe*.

The chemistry was also right between Harry and John, if we look at it from a peer culture perspective. Unfortunately, the workings in their interaction did not enable them to turn *Philippe* into an effective learning environment and made them frustrated with it. Their pay-off was probably in the re-assurance that their expectations were indeed borne out in their experiences as they saw them. Harry probably felt he had been right about all his points; after all, he got only a B+ for a final grade in the course, even if his teacher said "he could have done much better."

Concluding remarks

The analyses presented above point to the enormous complexities involved in the construction of environments for cognitive development. The wide range of variation in the way different groups of students used *Philippe* shows the vast potential of multi-media technology in foreign language instruction. However, it also makes it evident that, if we must understand computer mediated learning as a promising new route to disperse knowledge and improve performance, we must also see it as something which depends, for its effectiveness, on a complex array of elements beyond the technology that is used.

Since cognitive development is a shared phenomenon, cultural aspects must be taken into consideration if we want to understand how learners may profit from a computer-assisted environment. The analyses above have shown that issues having to do with the learners' cultural models and the peer cultures they inhabit may have a decisive culture in the shaping of these learning environments in interaction. Moreover, the fact that we have looked at learners who share similar background categories, and

yet construct their computer-assisted learning environment so differently, suggests that looking exclusively at the computer may obfuscate other important elements in computer-assisted language-learning situations.

The present study is limited in scope since it does not examine in greater detail the interaction between teachers and learners nor the interaction among learners outside class activities. However, it presents a small contribution in heeding Crookall et al.'s (1992: 94) call for "accurate and detailed descriptions of the [CALL] phenomena," confirming these authors belief that "In CALL activities, understanding the meaning of the events for the participants themselves (quality/process) is vital in any systematic attempt to define and assess the effectiveness of those activities (quantity/product)" (p. 114).

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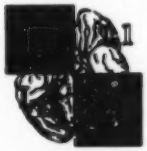

Appendix 1

Glossing:

line 1 — These students used the help system to acquire top-down information for comprehension of the story (e.g., who the characters are) before they started watching it .

line 2 — After watching the opening scene, they used the language-help system to review it by watching and listening to segments of their own selection both on regular and articulate (slow) audio tracks.

line 3 — In exploring Philippe's apartment in the morning, they looked at the classified ads (Figaro), listened several times to the first message in Philippe's answering machine (directly related to their assigned task to recount one message for each part of the day) and only once to the other messages. Then they tried to call the people offering apartments in the classified ads, reviewed classified ads once again, and then checked the list of real estate agencies.

line 4 — Using the surrogate travel function, they visited an apartment for rent, writing extensive notes about it, and then they looked at the suggestion box for some information about the interface.

line 5 — They ran out of time and were forced to meet Philippe as arranged at 11 o'clock (game time); when asked by Philippe about any messages in his answering machine, they accessed the language-help system to watch the question being asked again with both regular and articulate audio, and then they told Philippe that Mme. Soloniac had called.

line 6 — Upon returning with Philippe to his apartment they responded to his question about the location of the check to pay the plumber by saying they had no idea where it was, a problematic and unusual reply. After the plumber left without fixing the leak in the sink, they looked at Philippe's note with his aunt's address and at the classified ads, but did not listen to the answering machine, an indispensable activity to get information leading to a few of the possible solutions of the game.

line 7 — They chose to go to Philippe's aunt's apartment. When Philippe asked for their advice on whether or not to ask his aunt if he could stay in her apartment, they first accessed the help system to listen to his question again, and then told him to go ahead and ask her. When Philippe asked whether he should give up, given his aunt's reaction, they once again resorted to help system to review his question, and then told him to abandon the idea.

line 8 — They then followed Philippe back to his apartment at the end of the day, and watched the final scene in which Philippe faces the failure which is also the students'.

Appendix 2

group	session record	student ID, sex	class	major	French as FL instruction	other FL experience	experience in France
1X	1 & 2	S22, F	SR	Chem	4 yr HS, 2 sem U	-	-
		S23, F	ES	Fren	?	Korean NS	visit as child
2X	1 & 2	S24, F	JR	Econ	4 sem U	Urdu NS,	-
		S25, F	JR	Bio-chem	2 yr HS, 2 sem U	Taiwanese NS	yes, without NS contact
		S26, F	SO	Art Hist	2 yr HS, 2 sem U	-	-
3X	1 & 2	S27, F	JR	Econ	4 yr HS	Spanish	2 wk holiday
		S28, F	SO	Bio-chem	4 sem U	Hindi NS, Arabic	1 mth w/ own family
4X	1 & 2	S29, M	SO	Finan	5 yr HS, 1 sem U	Russ 3 sem, Lat, Hebrw	1 wk w/ class
		S30, M	FR	undec	5 ys HS, 1 sem U	Latin	6 mth on/off w/NS
5X	1&2	S31, F	SO	n/a	4 yr HS, 2 sem U	Spanish, Latin	6 wk (3 w/ NS)
		S32, F	SO		6 yr HS, 1 sem U	-	1 wk
6X	1	S33, F	FR	undec/ Fren	4 yr HS	-	-
		S34, F	SO	Psych	4 yr HS	Spanish NS	-
7X	1	S35, F	SO	undec	4 yr HS, 2 sem U	-	-
		S36, M	JR	Busin	2 yr HS, 2 sem U	Polish NS, Germ 1 yr	summer w/ Fr family

(Appendix 2, continued on next page)

Appendix 2, continued

group	session record	student ID, sex	class	major	French as FL instruction	other FL experience	experience in France
8Y	2	S37, F	SO	Hist	3 yr HS, 3 sem U	Latin in HS	summer w/ NS
		S38, F	JR	Bio	4 yr HS, 3 sem U	Latin in Middle Sch	3 wk (1 w/ NS)
		S39, F	SR	Eng	4 yr HS, 5 sem U	-	summer w/ NS
9Y	2	S40, F	FR	undec	6 yr HS	Span 3 yr	
		S41, M	SO	Hist/IR	3 yr HS, 2 sem U	-	
		S42, M	FR	undec	5 yr HS	Hebrew	
10 Y	2	S43, M	JR	undec	3 yr HS, 1 sem U	Arabic	summer w/ NS
		S44, F	SO	undec	3 sem U	Korean	7 wk w/NS
11 Y	2	S45, F	FR	undec	4 yr HS	Latin 3 yr	6 wk (1 w/ NS)
		S46, F	FR	undec	4 yr HS	Gujarati NS, Latin 2 yr	1 mth w/ own family
12Y	2	S47, M	SO	Hist	6 yr HS	Hebrw 4 yr	1 mth
		S48, M	HSSR	n/a	5 yr	Hebrw 3 yr, Indonesian 1 mth	1 mth +hosted Fr. Student 1 mth

NS = native speaker; ES = exchange student; SR = senior; JR = junior; SO = sophomore; FR = freshman; HS = high school; U = college; FL = foreign language